

REMARKS/ARGUMENTS

In view of the amendments and remarks herein, favorable reconsideration and allowance of this application are respectfully requested.

Applicant notes, with appreciation, that the Examiner has indicated that claims 3, 4, 6 and 7 are directed to allowable subject matter and would be allowed if amended to independent form.

Claims 1, 2 and 5 have been rejected under 35 USC 102(b) as being anticipated by Marque-Pucheu. Claims 8-10 have been rejected under 35 USC 102(b) as being anticipated by Taguchi. Claim 11 has been rejected under 35 USC 103(a) as being obvious over Taguchi. In view of the amendments and remarks herein, Applicant believes that all of the pending claims are now in condition for allowance.

By this Amendment, claim 3 has been rewritten in independent form including all of the limitations of the base claim 1, so as to be in condition for allowance together with its dependent claims 4, 6 and 7. In addition, apparatus claim 1 and independent method claims 8, 9 and 10 have been amended to more clearly distinguish the cited references. In addition, new storage medium claims 12 and 13 similar to claim 11, new method claims 14, 15 and 16 further limiting claims 8, 9 and 10, respectively, and new independent apparatus claim 17 have been added. All of the pending claims are believed to be in condition for allowance.

Regarding the rejection under 35 USC 102 based on Marque-Pucheu, Applicant responds as follows. At page 2, item 2 in the Office Action, the Examiner alleges that the

transposition means 26, 27 in the repeater station 24 corresponds to the whole spectrum inverter claimed in claim 1. However, Applicant respectfully contends that this assertion is incorrect. first, the portion at col. 4. lines 36-43 cited by the Examiner discloses only indirectly via the transposition means 48a, 49a, 48b, 49b in the base station 23 that the transposition means 28a, 29a, 28b, 29b in the repeater station 24 performs spectrum reversal. Second, the portion at col. 3, lines 21-22 discloses neither the bandpass filter nor the above spectrum reversal and this spectrum reversal is disclosed in the subsequent paragraphs, i.e., at col. 3, line 50 through col. 4, line 12. In these paragraphs, it is disclosed that the transposition involving spectrum reversal is performed in the first line 11, 21 of the repeater station 14, 24 in order to prevent the mobile station 6 from intercepting a radio call set up between the fixed base station 13, 23 and the repeater station 14, 24 (col. 3, lines 53-58). The frequency F of the oscillator 28 is selected to transpose the frequency channel of call going to the repeater station 14, 24 into another frequency channel of the same band that is allocated to calls from the repeater station 14 24 to the mobile station 6 (col. 3, line 64 - col. 4, line 1). From the above disclosure, the radio transmission method of Marque-Pucheu is schematically shown in Fig. A of the drawings enclosed herewith.

As shown in Fig. A attached hereto, the repeater station 24 transposes the frequency channel of the received signal from the base station 23 into another frequency channel within the same frequency band with spectrum of the signal being inverted and retransmits the transposed signal to the mobile station 6. The repeater station 24 also

transposes the frequency channel of the received signal from the mobile station 3 into another frequency channel within the same frequency band with the spectrum of the signal being inverted and retransmits the transposed signal to the base station 23. Since the repeater station 24 retransmits the received signal as a signal transposed within the same frequency band, it is not the whole spectrum inverter (40) claimed in claim 1 and disadvantageously requires two pairs of transmitters and receiver, the frequency band of each pair being different.

In contrast to this, the communication apparatus claimed in claim 1, as is shown in the exemplary Fig. B of the drawings attached hereto, the whole spectrum inverter 40 in the base station 10 inverts a frequency spectrum including the first and second received signals from the first and second hand sets A, B having frequencies within the transmission frequency band into a frequency spectrum including the first and second received signal to the second and first hand sets B, A having frequencies within the different reception frequency band. In other words, the base station 10 converts the frequencies of the received signals from the hand sets A, B into frequencies within other frequency band than that of received signals with the frequency spectrum being inverted and transmits the converted signals to the hand sets B, A. The base station 10 transmits a signal to the hand sets A, B in the same frequency allocation as in case of communication between the hand sets by means of transmitting a signal whose frequency (within the transmission frequency band) is separated by a specified interval from the frequency (within the reception frequency band) of the received signal. Thus, the base station 10

only receives signals in the reception frequency band and only transmits signals in the transmission frequency band. Consequently, communication between the hand sets A, B becomes advantageously feasible by one receiver for the reception frequency band and one transmitter for the transmission frequency band. The new independent apparatus claim 17 further defines the above specified intervals ($f_{ra} - f_{rb} - f_{tb}$) are equal to each other in order to achieve a fixed duplex interval communication. This feature is neither disclosed nor suggested in Marque-Pucheu's reference. For at least these reasons, reconsideration and withdrawal of this rejection are respectfully requested.

As to the anticipation rejection of independent method claims 8, 9, 10 citing Taguchi, Applicant responds as follows. At page 3, item 3-2) in the Office Action, the Examiner alleges that Taguchi discloses a signal processing technique comprising steps of: converting the sampling rate to 2 KHz as claimed in claim 8, i.e., complimenting sample data obtained by the sampling to convert a sampling rate; or "setting part of sampled data obtained by the sampling to zero" as claimed in claim 10. However, this is incorrect, because the above underlined features are not disclosed in Taguchi at all.

Taguchi discloses in Fig. 15 and at col. 11, lines 29-40 only decimating the sampled data at 2 KHz. At page 3, item 3-3) in the Office Action, the Examiner alleges that Taguchi discloses using a low pass filter to extract "inverted" spectrum, indicated by P. However, this is incorrect, because the above underlined contents are not disclosed at all. Taguchi's decimator 48 shown in Fig. 15 and disclosed at col. 11, lines 29-40, which is cited by the Examiner, substitutes for the frequency multiplexer 17 of the first embodiment shown in

Fig. 1 as the third embodiment. Therefore, as disclosed the above portion in the specification, the multiplexed signal with a spectrum indicated P outputted from the decimator 48 (Fig. 15) is provided to the D/A converter 18 and subsequently LPF 19 shown in Fig. 1. The function of the frequency multiplexer 17 (42 in Fig. 6) substituted in the third embodiment by the decimator 48 is disclosed in detail referring to the major signal spectrum characteristic diagram of Fig. 7 at col. 5, line 55 thorough col. 6, line 31. There it is disclosed that the spectrum S1 is an analog input spectrum to frequency multiplexer 17, i.e., to decimator 48 (see the first paragraph) and the spectrum s10 is supplied to the D/A converter 18 and LPF 19 to produce an analog output spectrum S11 (see the last paragraph). Comparing the input spectrum S1 to decimator 48 to the output spectrum S11 from the LPF 19, the latter comprises the former shifted in right-direction 0 to 3 times. It should be noted here though inverted spectrums of spectrum S1 exist in the middle of the spectrum processing in the decimator 48 as, e.g., spectrums S3, S6...S 10, these inverted spectrums are all removed to obtain the analog output S11 from LPF 19 and are not used in the subsequent stages such as transmission channel. Consequently, Taguchi never teaches or suggests using a low pass filter to extract "inverted" spectrum as required by the present claims 8, 9, 10.

In view of the foregoing amendments and remarks, Applicant believes that all of the pending claims clearly and patentably distinguish the prior art of record and are in condition for allowance. Thus, withdrawal of the rejections and passage of this case to issuance at an early date are earnestly solicited.

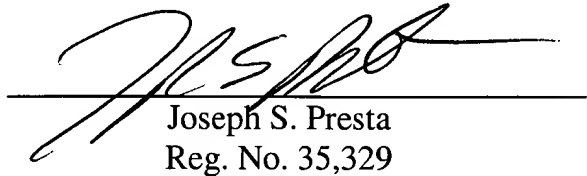
SAWA et al.
Appl. No. 09/729,169
July 22, 2004

Should the Examiner have any questions regarding this response, or deem that any formal issues need to be resolved prior to allowance, the Examiner is invited to call the undersigned attorney at the phone number below.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By:


Joseph S. Presta
Reg. No. 35,329

JSP:mg
1100 North Glebe Road, 8th Floor
Arlington, VA 22201-4714
Telephone: (703) 816-4000
Facsimile: (703) 816-4100